

Concerning the Neogeophilidae, with Proposal of a New Genus.¹ (Chilopoda: Geophilomorpha: Neogeophilidae)

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In 1918 Filippo Silvestri proposed as new two remarkable genera, *Neogeophilus* and *Evallogophilus*, and assigned them to a new geophilid subfamily, Neogeophilinae. He observed that the Neogeophilinae were to be distinguished from all other geophilids by their second maxillary coxosterna which are completely divided midlongitudinally, each bearing anteriorly a pair of peculiar uniarticular, lobate structures in place of the usual telopodites, associated medial projections, and lappets. The distinctiveness of his new forms, he explained, was further enhanced by their bizarre pretarsal modifications: each of the more anterior pretarsi bears a sizeable tooth projecting from the ventral arch of the pretarsal claw proper. Each of these three characteristics was unknown to occur within the Geophilidae, and their combination was, and remains, common only to the Neogeophilidae.

In 1926 Attems elevated the Silvestri subfamily to full family rank but cautioned that family status must remain provisional prior to a more detailed presentation of distinctive features. In his ordinal monograph of 1929 Attems summarized what was known of the neogeophilids—somewhat inaccurately, as we shall see—but continued to accord to them full family status. Since 1929 no new species have been referred to the family, and no new evaluation of the Silvestri specimens has been issued. The matter rests as Dr. Attems left it: the rank of the suprageneric, collective category to which the Silvestri genera and the present new genus are referable remains provisional.

Neogeophilus and *Evallogophilus* were founded upon two species, which in turn were based upon three specimens. To these may now be added a fourth specimen, representing a new

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species and, evidently, genus. This newst neogeophilid was discovered among some undetermined, miscellaneous material that was collected more than fifty years ago in Guatemala and sent to O. F. Cook, whose interests by that time had shifted nearly completely from Chilopoda to Diplopoda and botany. Dr. Cook labelled the specimen as a "*Geophilus*," then put it aside, apparently without further attention. This specimen manifests the same distinctive higher categorical characteristics that Silvestri recognized in his two species. In addition to these diagnostic family characters that Silvestri specified, there is another of considerable significance that he failed to cite. The basal article of the second maxillary telopodite is entirely without dorsal and ventral condyles. They are absent in the present, new form, and, according to his figures, they are absent in his two species.

CRYPTOSTRIGLA, new genus

Differential Diagnosis.—The new genus, while sharing some significant characters with each of the other genera, seems more reminiscent of *Evallogophilus* than of *Neogeophilus*. At the same time it manifests certain features seen in neither of the Silvestri genera. The presence in *Cryptostrigla* of the following features will readily distinguish it from *Neogeophilus*: ultimate pedal pretergite and pregenital sternite are indistinctly separated from their respective, adjacent plates; the subcondylic sclerotic lines of the prosternum are abortive and incomplete, hence do not pass across the prosternal corner to or toward the telopodite condyles; the female gonopod consists of one article, the two constituent articles having fused without discernible trace of an intervening suture.

The following generic characters are common both to *Evallogophilus* and *Cryptostrigla*: prosternal denticles are present; the ultimate pedal pretergite is completely or almost completely amalgamated with its tergite; the ultimate pedal sternite is completely or almost completely amalgamated with the pregenital sternite; the paraclypeal sutures do not diverge outward posteriorly (see discussion under Notes). These two genera differ, at least, as follows. *Evallogophilus*: (1) prosternal subcon-

dylic sclerotic lines pass toward and meet or nearly meet the basal prehensorial condyles; (2) each female gonopod is distinctly biarticulate, the interarticular suture being persistent; (3) ultimate pedal pretergite is apparently wholly fused with its tergite (see Silvestri's Figs. 6, 9, p. 357: see discussion under Notes below); (4) ultimate pedal sternite apparently wholly fused with the pregenital sternite (see Silvestri's Figs. 7, 10, p. 357). *Cryptostrigla*: (1) prosternal subcondylic sclerotic lines are abortive and coincident with part of the pleuroprosternal sutures, the former neither meeting nor passing toward the prehensorial condyles; (2) each female gonopod manifests no discernible interarticular suture, the two constituent articles having fused without trace of division; (3) the ultimate pedal pretergite is intimately fused with its tergite, but the intervening transverse suture, although obscure and vestigial, is persistent and readily discernible under optimum conditions of observation; (4) the ultimate pedal sternite is intimately fused with the adajacent pregenital sternite, but the intervening suture, although extremely obscure and vestigial, is still discernible but with difficulty.

See also the family résumé at the end of the article, where the generic diagnostic features are presented comparatively in tabular outline.

Type-species: *Cryptostrigla silvestri*, new species. (Present designation and monotypic).

Notes.—In his original description of *Evallogeophilus*, Silvestri characterized its ultimate pedal dorsal sclerite as follows, relying heavily upon this particular generic criterion for distinguishing between it and *Neogeophilus* (p. 357): "Genus hoc a genere *Neogeophilus* tergito segmenti ultimi pediferi praetergito destituto," He reported that the pretergite was absent, as indeed his figures 6 and 9 show it to be. Yet, comparing these figures with their counterparts for *N. primus* (p. 353, Fig. 13), the reader will see that the ultimate pedal tergite of *mexicanus*, which appears abnormally long, actually represents that tergite *plus its associated pretergite*. In other words, in *mexicanus* the pretergite and tergite are entirely amalgamated

without discernible intervening suture, or, if there is a suture, it is so vague that it escaped Silvestri's notice. Clearly, this degree of amalgamation does not typify *primus*, whose intertergital suture he recognized and figured in Fig. 13.

In *Cryptostrigla silvestri* the pretergite and tergite are intimately fused, but the intervening transverse suture is both persistent and, though obscure, easily visible after mounting in Hoyer's fluid and under optimum conditions of observation.

A similar explanation is almost certainly pertinent to the absence of certain ventral ultimate plates and sutures in *mexicanus*. On page 356 Silvestri wrote: ". . . sterno subaeque longo atque ad basim lato, lateribus paullum convergentibus, postice aliquantum sinuato, tergito praetergito nullo," If the reader will compare Fig. 16 on p. 353 (of *primus*) with its counterpart, Fig. 10, p. 357 (of *mexicanus*), he cannot but be struck by the facts, first, that the ultimate pedal sternite of *primus* is notably shorter and wider than that of *mexicanus*; secondly, that the pregenital sternite of *primus* (Fig. 16) is entirely absent in *mexicanus* (Fig. 10). Without much doubt, what Silvestri took to be the ultimate pedal sternite of *mexicanus* was, in fact, that sternite plus the following pregenital sternite with which it is intimately fused. The same is true in the case of the female (Fig. 7, p. 357), whose pregenital sternite is apparently absent and whose ultimate pedal sternite is abnormally long. In summary, one of two explanations must be true in the case of *mexicanus*, either: (1) the two plates are completely amalgamated without trace of an intervening suture, or; (2) the two plates are intimately fused but still separated by an intervening, vestigial suture that escaped Silvestri's notice. As has already been noted, in *C. silvestri* there is intimate fusion of the dorsal and of the ventral plates, but in each case there is a visible, vestigial suture testifying to what has happened.

Silvestri's original figures necessitate raising two additional queries. In each of these two instances we are confronted with the same question: Does the figure of the character appear extraordinary because it actually is, or rather because it was misrepresented by the artist?

In two figures (Fig. 13, p. 353, Fig. 13, p. 355) Silvestri has

shown the anterior surfaces of two representative pretarsi that are typical of his two new species. In each figure the anterior accessory spine is depicted as being very long, rather sinuous, apically abruptly pointed, or even notched apico-ventrally, and apparently hyaline or semi-translucent. In short, as he has figured them, these spines seem somewhat like long, fleshy lap-pets. One cannot help but wonder whether the anterior accessory spines have been misrepresented. In *Cryptostrigla silvestri* this accessory spine on all legs is perfectly straight and never sinuous; it is never notched apically or abruptly attenuate, and, what is most important, it is typically spinelike and quite opaque.

Secondly, note that in *primus* (Fig. 2, p. 353) the artis has shown the paraclypeal sutures to diverge outward posteriorly far beyond the rear clypeal margin. If this representation is accurate, then we are confronted with a remarkable departure from the usual case, wherein the two paraclypeal sutures, when complete, terminate at or near the posterolateral clypeal corner. If these sutures are as Silvestri has shown them, then they must be accorded preeminent significance as a generic criterion.

Finally, mention should be made of several important errors which Attems seems to have injected into his summary of the family (1929, p. 346). In his family diagnosis Attems reported that the ultimate pretarsus consists of one article. Insofar as the reader might therefore attribute this condition to all neogeophilids, his statement is misleading. In all known neogeophilids this character seems to be subject to intersexual dimorphism: the ultimate tarsus is uniarticulate in the known males of *N. primus* (Fig. 16, p. 353) and *E. mexicanus* (Fig. 10, p. 357), but it is biarticulate in the known females of *E. mexicanus* (Fig. 6, p. 357) and of *C. silvestri*.

Attems also characterized *E. mexicanus* (key, p. 346) as lacking a pretergite, whereas, as I have suggested above, it has a pretergite which is either wholly fused with the tergite, or else incompletely fused with it, in which latter case Silvestri's original description is in error.

(To be continued)